

**THE AUSTRALIAN RHYPAROCHROMINI
(HEMIPTERA: LYGAEIDAE)**

BY GORDON F. GROSS, CURATOR OF INSECTS, SOUTH AUSTRALIAN
MUSEUM, AND G. G. E. SCUDDER, UNIVERSITY OF BRITISH COLUMBIA

Plates 19-24

SUMMARY

This paper deals with the systematics of the tribe Rhyparochromini (Hemiptera: Lygaeidae) in the Australian region. Twenty species, six of them new, belonging to five genera are described and figured. Most of the species belong to the genus *Dieuches*; species from this area formerly ascribed to *Aphanus* are shown all to belong either to *Dieuches* or to *Elasmolomus*.

INTRODUCTION

The insects considered in this paper belong to the Lygaeid subfamily Rhyparochrominae, which is characterized by having the suture between sterna IV and V laterally curved anteriorly and not reaching the lateral margin of the abdomen. The tribe Rhyparochromini is distinguished by having the spiracles on abdominal segments III and IV dorsal, whilst all other segments of the abdomen have ventrally placed spiracles: in Scudder (1957) the group is considered as the subtribe Rhyparochromina, but now the taxon is considered to be a full tribe (Scudder 1962b).

Only five genera so far are known to occur in Australia, namely *Bosbequius* Distant, *Dieuches* Dohrn, *Elasmolomus* Stål, *Narbo* Stål and *Poecantius* Stål.

All Australian and Eastern Pacific Island species formerly considered to belong to the tribe Gonianotini and described as species of the genus *Aphanus* Laporte or *Pachymerus* Lepelletier—Serville are shown to belong to the tribe Rhyparochromini and are treated here. This results in the elimination of the Gonianotini in this sub-region. Australian and Eastern Pacific Rhyparochrominae belong only to the tribes Cleradini, Drymini, Lethaeini, Rhyparochromini and

Myodochini in the present arrangement of the tribes. Sweet (personal communication) indicates the imminent erection of some additional tribes but these will not alter the disposition of genera treated in this paper.

KEY TO GENERA OF AUSTRALIAN RHYPAROCHROMINI

1. Lateral margins of pronotum gently convex and corium without a pale subapical spot 2
 Pronotum usually with lateral margins straight or concave; corium with a more or less distinct pale subapical spot 3
2. Lateral carinae to pronotum narrow but distinct; corium brown with irregular ochraceous maculae; scutellum without distinct ochraceous marks apically *Bosbequius* Distant
 Lateral carinae to pronotum broad and expanded in middle; corium ochraceous with irregular brown maculae; scutellum with distinct ochraceous marks apically .. *Elasmolomus* Stål
3. Elongate insects with lateral margins of pronotum lacking a distinct laminate carina; male genital capsule with a small tubercle *Narbo* Stål
 Robust insects, the pronotum with distinct lateral laminate carinae, although sometimes rather narrow 4
4. Basal half of the corium pale, apical half castaneous with a pale subapical spot; pronotal lateral carinae narrow; middle femora in male unarmed; male genital capsule without a small tubercle; membrane if with pale spots then these basal *Poeantius* Stål
 Basal half of corium distinctly marked with castaneous; pronotal lateral carinae usually broad and turned slightly dorsal; middle femora in male armed with small spines; male genital capsule with small tubercle; membrane if with pale spot then this apical *Dieuches* Dohrn

Bosbequius Distant 1903

Bosbequius Distant 1903, Faun. Brit. Ind. Rhynch. 2: 64.

Head triangular, minutely punctate, and with antennal tubercles visible from above; clypeus extending well beyond paraclypeal lobes; antennae with stiff semierect hairs; first segment of antennae extending beyond apex of head, second the longest; rostrum with first segment extending less than half way to base of head.

Pronotum wider than long; disc flat and without distinct transverse impression; lateral margins continued laterally as a laminate carina; lateral margins gently convex; posterior margin slightly concave; disc in anterior half more or less impunctate; lateral and anterior margins and posterior part of pronotum with distinct punctures.

Scutellum longer than wide; basal half of disc slightly excavate; distinctly punctate.

Fore femora incrassate and with small spines more or less along the whole length, terminal ones the most prominent; posterior tarsus with basal tarsomere longer than combined length of the two distal tarsomeres.

Hemelytra without distinct and contrasting dark and pale markings and without a distinct pale subapical spot to corium; clavus with three or more rows of punctures; corium quite densely punctate.

Type species: *Bosbequius latus* Distant 1903, from Tenasserim.

***Bosbequius australis* Distant 1918**

Plate 19, fig. A

Bosbequius australis Distant 1918, Ann. Mag. nat. Hist. (9)2: 260.

Colour. Head brown-black with apex of clypeus slightly ferruginous; antennae pale ferruginous with first segment and apical parts of second and third brown; rostrum ferruginous.

Pronotum with anterior and lateral margins and lateral areas of posterior part, ferrugino-ochraceous; rest of disc ferruginous, with anterior part brown black.

Scutellum brown with apical part slightly ferruginous. Legs brown or dark ferruginous with tibiae and tarsi ferrugino-ochraceous.

Hemelytra ferruginous to dark brown with irregular ochraceous maculae, usually along apical margin of corium and near Cu; membrane fuscous with basal parts of veins and small spots near their apex, somewhat pale.

Venter dark ferruginous.

Structure. Head finely punctate; antennal ratio 7: 22: 17: 20; rostrum reaching between fore and middle coxae.

Pronotal width: Length, 48:34. *Total length*: 7 mm.

Distribution: Queensland, Northern Territory.

Australian records: N.W. Australia, Adelaide River, J. J. Walker (B.M.); Cape York, Coen, 1921-1922, W. McLennan (A.M.).

Dieuches Dohrn 1860

Dieuches Dohrn 1860, Stett. ent. Z. 21: 160.

Dieuches Stål 1872, Öfvers. Vetensk. Akad. Förh., Stockholm, (7): 58.

Dieuches Stål 1874, K. Vetensk. Akad. Handl., 12(1): 161.

Dieuches Scudder, 1962a, Canad. Ent., 94 (7): 766.

Abanus Distant 1909, Ann. Mag. nat. Hist., (8)3: 493.

Maxaphanus Distant 1918, Ann. Mag. nat. Hist., (9)2: 265.

Elongate robust insects; head and much of pronotum fuscous; head triangular with antennal tubercles clearly visible from above; eyes more or less touching anterior margin of pronotum; finely punctate; first antennal segment surpassing apex of head.

Pronotum with lateral margin carinate, the carina laminate, often broad and usually upturned; disc usually with a distinct transverse impression near middle; distinctly punctate; posterior margin slightly concave.

Scutellum usually longer than broad; distinctly punctate; with basal half of disc flat or slightly excavate; often with a vague Y-shaped elevation.

Legs with fore femora moderately swollen and with subapical ventral spines; middle femora in male usually with small ventral spines; tibiae with stout outstanding setae; posterior tarsus with basal tarsomere twice as long as the combined length of the two distal tarsomeres.

Hemelytra distinctly marked with brown or black and ochraceous; usually with a distinct subapical pale spot to corium; membrane if with pale spots, then these apical; clavus with more than three rows of punctures; corium distinctly punctate. Venter fuscous; often with postero-dorsal corner of metapleurae, coxal covers and lateral spots on abdomen, ochraceous. Male genital capsule with a small ventral tubercle.

Type species: *Dieuches syriacus* Dohrn, from Syria and the Mediterranean area.

Dieuches leucoceras (Walker) was recorded from Murray Island by Carpenter (1891): 139, 'one of the specimens from Murray Island seems to me to be identical with Walker's type from Ceylon, in the British Museum,' but it would appear that this record is based on a misidentification; we have seen no specimens of this species from this Island.

KEY TO AUSTRALIAN AND NEW GUINEA SPECIES OF DIEUCHES

1. Large insects; over 10 mm. in length; pronotum conspicuously broad and with a raised central line posteriorly; Banks Island *grandicus* sp. nov.
- Smaller insects, usually under 9 mm. in length, if longer then pronotum not conspicuously broad and with a raised central line posteriorly 2
2. Dorsum and/or legs with long outstanding hairs 3
- Insects not hirsute, without long outstanding hairs 4
3. Inner angle of pale subapical spot of corium, truncate *consanguineus*
Distant
- Inner angle of pale subapical spot of corium, acute *hirsutus* sp. nov.
4. Anterior two-thirds of pronotal lateral carinae white and often translucent, if black, then only extreme anterior part so coloured 5
- Anterior third to fifth of pronotal lateral carinae, black 11
5. Elongate insects, with legs and antennae appearing long and slender; subapical pale spot of corium constricted in middle *longicollis* (Dallas)
- Insects not greatly elongate; legs and antennae not appearing conspicuously long and slender; subapical pale spot of corium not constricted in middle 6

6. Inner angle of pale subapical spot of corium, truncate *oceanicus* (Distant)
- Inner angle of pale subapical spot of corium, not truncate 7
7. Pronotum longer than wide, conspicuously constricted laterally and not conspicuously tapering anteriorly; inner angle of corium with a pale triangular spot . . . *torpidus* sp. nov.
- Combination of characters not as above . . . 8
8. Pronotum with posterior lobe without pale markings or with a central pale streak and sometimes also one pale spot on each side of streak, near transverse impression 9
- Pronotum with posterior lobe with a central pale streak and two pale spots on each side; anterior margin of corium, seen from side without fuscous spots in basal half; sterna V and VI with pale lateral spots *finitimus* Van Duzee
9. Anterior margin of corium, seen from side, without fuscous spots in basal half; dorsum of insect chocolate brown . . . *obscuripes* (Walker)
- Anterior margin of corium, seen from side, with fuscous spots in basal half; dorsum of insects rather black 10
10. Anterior margin of corium, seen from side, with two pale spots in basal half and apically a large pale area coincident with pale subapical spot of corium, and the pale spot laterally on sternum V . . . *scutellatus* Distant
- Anterior margin of corium, seen from side, with three pale spots in basal half and apically a large pale area coincident with the pale subapical spot of corium, and the pale spot laterally on sternum V . . *enigmaticus* sp. nov.

11. Inner angle of pale subapical spot of corium truncate or acute and continued to inner angle of corium through a fainter and generally more ochraceous spot; pronotal lateral carinae anteriorly rather narrow 12
 Inner angle of pale subapical spot of corium not truncate and not continued to inner angle of corium; pronotal lateral carinae not much narrower anteriorly 13
12. Hemelytra reaching almost to apex of abdomen *notatus* (Dallas)
 Hemelytra not reaching almost to end of abdomen, but leaving apical segments of abdomen exposed *nudus* sp. nov.
13. Terminal segment of antennae completely black *maculicollis* (Walker)
 Terminal segment of antennae with basal part white *distanti* Bergroth

***Dieuches grandicus* sp. nov.**

Plate 20, fig. A

Head dark ferruginous brown; antennae ferrugino-ochraceous with whole of first segment, apex of second and third, and extreme base and apical half of fourth ferruginous brown; fourth antennal segment with an ochraceous basal annulation; rostrum with first segment ferruginous brown, second and third rather ochraceous and fourth ferruginous with brown apex.

Pronotum with lateral carinae in basal third brown black, in middle ochraceous and in anterior third pale ferruginous; disc dark ferruginous brown to black with pale markings posteriorly consisting of a very short median raised longitudinal line and an ochraceous spot each side situated near transverse impression; anterior margin of pronotum with two vague pale spots.

Scutellum dark ferruginous brown to black with apex slightly pale and with two distinct lateral luteo-ochraceous spots.

Legs ochraceous with coxae and most of femora dark ferruginous brown to black; tibiae fuscous; tarsi more or less ferrugino-ochraceous.

Hemelytra luteo-ochraceous with dark brown to black markings; clavus except for streak and spots at base, and corium except for subapical pale spot and four complete or broken streaks in basal half, dark brown to black; pale subapical spot to corium with inner angle rather obtuse, basal side slightly concave and apical side convex; membrane fuscous, the apex slightly pale.

Abdominal sterna V and VI with lateral pale spots. Insects not hirsute.

Antennal ratio 20: 44: 40: 40; rostrum reaching posterior coxae. Pronotum with broad lateral carinae; lateral margins convergent anteriorly and concave at level of transverse impression of disc; pronotal width: length, 60: 57. Hemelytra reaching apex of abdomen. Fore femora with seven or eight small spines and a single long spine ventrally in anterior row; middle femora of female with four small setigerous spines.

Total length female 10.4 mm.

Type: Holotype a female, Moa I., Torres St. (S.A.M.). *Paratypes*: 2 females, Moa, Banks I., Torres St., 18 December 1919, W. McLennan; 1 female, id., 17 December 1919 (A.M.).

A species easily recognized by its size. Only *D. obscuripes* (Walker) is also known from this island and this latter species is only about 7.5 mm. in length, is much narrower and on the posterior part of the pronotum, the pale central line is not conspicuously raised.

***Dieuches consanguineus* Distant 1904**

Plate 21, fig. B

Dieuches consanguineus Distant 1904, Ann. Mag. nat. Hist. (7)13: 268.

Head dark ferruginous brown with clypeus flavescent; antennae ferrugino-ochraceous with apical part of first and third segments slightly fuscous; fourth segment with extreme base and apical $\frac{2}{3}$ dark brown, the rest ochraceous to white; rostrum ferrugino-ochraceous.

Pronotum with lateral carinae, except for extreme posterior corners ochraceous; anterior part of disc dark ferruginous; posterior part of disc ochraceous with punctures, humeral angles and patches each side of mid-line, dark ferruginous. There is a very distinct line

of transverse punctures just behind collar and a faint longitudinal keel on both lobes.

Scutellum dark ferruginous brown with apex and two large lateral irregular spots luteo-ochraceous.

Legs ochraceous with coxae and apical parts of femora dark brown; apex of tibiae and tarsi usually fuscous.

Hemelytra ochraceous with dark ferruginous-brown markings; subapical pale spot to corium distinct and with inner angle truncate, basal side concave, apical side convex; basal half of anterior margin of corium, seen from side, completely pale; much of clavus, apical half of corium and corium adjacent to claval suture, castaneous; membrane fuscous with apical pale spot; sterna V, VI and VII with lateral pale spots. Specimens occur which have the darker parts of pronotum, scutellum and hemelytra a deep chocolate with a velvet texture.

Insects distinctly hirsute; dorsum with long upstanding hairs; femora with long outstanding hairs. Antennal ratio 15: 33: 30: 33; rostrum reaching middle coxae. Pronotum with broad lateral carinae; lateral margins convergent anteriorly and slightly concave at level of distinct transverse impression of disc. Hemelytra reaching tip of abdomen; fore femora with row of 11-12 short spines; middle femora with three or four short spines in male. Pronotal width: length, 45: 35. Total length 6.2-8.2 mm.

Distribution: Australia.

Australian records: Queensland: Cooktown, 1939 J. L. Erben (Prague); 1 female, Almaden, Chillagoe District N.Q., June-Sept. 1929 W. D. Campbell (A.M.); 1 male, 1 female, Ayr, 25 July 1954 G. Saunders (U.Q.); 1 male, attracted to light, Cairns District A. M. Lea; Birri, Mornington I., 8 May 1960, P. Aitken, N. B. Tindale (S.A.M.); 1 female, Redlynch, 14 Aug. 1938, R. G. Wind (C.A.S.). Torres Straits: 1 male, Prince of Wales I., 21 Feb. 1939, R. G. Wind (C.A.S.). Northern Territory: Daly R. (G. G. E. Scudder, Vancouver); 1 male, Stapleton, G. F. Hill; 1 female, Port Darwin: 3 males, 8 females, 6 nymphs, Darwin Botanic Gardens, 6 Jan. 1961 G. F. Gross; 1 female at light, Mitchell Street, Darwin 5 Jan. 1961. G. F. Gross (S.A.M.); 6, Northern Territory Administration Grounds, Darwin, 21 Sept. 1956 L. D. Crawford; 1, Darwin 8 Oct. 1956 L. D. Crawford (A.N.I.C.).

Similar to *D. oceanicus* (Distant) but dorsum and femora with long outstanding hairs.

Dieuches obscuripes (Walker 1872)

Plate 22, fig. D

Rhyparochromus obscuripes Walker 1872, Cat. Hct. B.M. 5: 104.*Rhyparochromus obscuripes* Carpenter 1891, Proc. R. Dublin Soc. 1891: 139.*Dieuches obscuripes* Distant 1901, Ann. Mag. nat. Hist. (7)8: 509.

Head dark ferruginous; antennae ferrugino-ochraceous with apex of fourth segment dark brown; rostrum ferruginous with tip brown.

Pronotum with lateral carinae ochraceous in middle and with extreme anterior and posterior parts fuscous; disc dark ferruginous with pale markings posteriorly consisting of a short longitudinal median streak and one pale spot on each side near transverse impression.

Scutellum dark ferruginous with apex and two lateral spots ochraceous.

Legs ferruginous brown with base of middle and hind femora ochraceous.

Hemelytra dark ferruginous with a distinct subapical ochraceous spot and in basal half, with anterior margin of corium pale and with three ochraceous spots in transverse series in middle of corium; clavus with a short basal ochraceous streak; subapical pale spot to corium with inner angle acute, basal side more or less straight and apical side slightly concave; basal half of anterior margin of corium, seen from side, without fuscous spots except for extreme base; apical margin of corium dark brown especially in anterior half; extreme apical angle luteous; membrane fuscous with a pale tip.

Abdominal sterna V and VI with lateral ochraceous patches.

Insects not hirsute; antennal ratio 14: 30: 31: 32; rostrum reaching middle coxae. Pronotum with broad lateral carinae; lateral margins slightly convergent anteriorly and slightly concave at level of transverse impression; pronotal width: length, 37: 33. Fore femora with nine small and one large spine ventrally in anterior row; middle femora of male with about six small spines basally. Hemelytra reaching tip of abdomen. Total length 7.4 mm.

Distribution: New Guinea, Murray Is., Banks Is.

Australian records: Moa, Banks Is., Torres St., 18 Dec. 1919 W. McLennan (A.M.).

Similar to *D. finitimus* Van Duzee but with posterior part of pronotum with different colouration.

There is an Australian series, many specimens of which approximate the type of *Aphanus oceanicus* Distant, but which are very close in certain details to *obscuripes*. They are very similar in shape and size and the pronotum is on the whole flatter than in the average Australian *Dieuches*. The large apical spot is somewhat truncate along the inner margin in extreme Northern and North Western examples (pl. 23, fig. C) but tends to be more rounded on the interior margin in Central Australian and Western examples (pl. 22, fig. C). In North Eastern examples, this large spot is narrower and very like a New Guinea example of *obscuripes* in the South Australian Museum.

The South Australian Museum specimen from New Guinea and the Banks Island specimens of *obscuripes* both have the basal half of the corium almost devoid of prominent pale markings although a faint pattern appears as a trace and seems to be of the *oceanicus* type. Both specimens of *obscuripes* have only a single pale streak on the clavus along the corial commissure.

These Australian specimens are being provisionally kept distinct as the next species, *Dieuches oceanicus*, but it may be that *oceanicus* is only a subspecies of *obscuripes*. All these specimens have two pale spots on the clavus, the longer along the claval commissure and the shorter along the scutellar margin, and prominent pale markings in the basal half of the clavus.

***Dieuches oceanicus* (Distant 1901)**

Plate 22, fig. C and plate 23, fig. C.

Aphanus oceanicus Distant 1901, Ann. Mag. nat. Hist. (7)8: 502.

Dieuches oceanicus Scudder, 1962a, Canad. Ent., 94(7): 767.

Head dark ferruginous brown; antennae dark ferruginous brown with basal half of second segment ochraceous and fourth segment with a sub-basal whitish annulation; rostrum ferrugino-ochraceous with apex brown.

Pronotum with lateral carinae ochraceous and with extreme posterior part fuscous and extreme anterior slightly ferruginous; disc dark ferruginous brown with pale markings posteriorly consisting of a median longitudinal ochraceous streak and two ochraceous spots on each side near transverse impression.

Scutellum dark brown with an apical and two lateral ochraceous spots.

Legs ochraceous with coxae and apical parts of femora dark brown; posterior tibiae ferruginous brown.

Hemelytra dark ferruginous brown and ochraceous; corium with a distinct pale subapical spot and basal half of corium almost completely pale; clavus with two short basal pale streaks; subapical spot of corium with inner angle truncate; basal side concave and apical side slightly convex; basal half of anterior margin of corium, seen from side without fuscous spots; membrane fuscous with pale apex.

Thoracic venter with coxal covers and posterior margin of metapleurae pale ferruginous; abdominal sterna V, VI and VII with lateral ochraceous patches. Sometimes the colour pattern is more varied than here described with more cream and castaneous colours in place of the usual darker colours.

Insects not hirsute; antennal ratio 12: 27: 27: 28; rostrum reaching middle coxae. Pronotum generally rather flattish and with broad lateral margins convergent anteriorly and more or less straight; disc with distinct transverse impression; pronotal width; length 42: 30.

Fore femora with seven small and one large subapical spine in antero-ventral row. Hemelytra reaching end of abdomen.

Total length: 7.8-8.5 mm.

Distribution: Australian.

Australian records: Northern Territory: Indinda Well, 3 miles west of Andado Stn.; Newcastle Waters, 5 May 1929 T. G. Campbell (A.N.I.C.); Darwin, Jan. 1939 M. Kamper (A.M.); Darwin, 30 Jan. 1914 G. F. Hill; Hermannsburg Capt. S. A. White; Macdonald Downs (S.A. Mus. Exped. Aug. 1930) (S.A.M.); Mt. Olga, Sept. 1948 Bechervaise (N.M.). Queensland: Mt. Isa, Feb. 1954 Lamberts; Coen, 14-27 May 1951 C. Oke (N.M.) Bathurst Head, Jan. 1927 Hale & Tindale; Stewart R., Jan.-Feb. 1927, Hale & Tindale (S.A.M.); Olsen Cave, Rockhampton, Oct. 1924, A. Musgrave; Thargomindah, Apr. 1941 N. Geary; Clermont, Dr. K. K. Spence (A.M.); Torres St.: Prince of Wales Is., 21 Nov. 1939 R. G. Wind (C.A.S.). Western Australia (North): Cossack, J. J. Walker (B.M.); Kimberley Dist., Mjöberg (Stockholm). Western Australia (Central): Nicol Bay District, Clement (G. G. E. Scudder, Vancouver); Tambrey Stn., 24-26 July, 1958 F. J. Mitchell; Pilgangoora near Pilbara, 5 May 1953 N. B. Tindale (S.A.M.); 6, Cocoa Beach, Trimouille Is., Monte Bello Is., 12 Nov. 1953 T. G. Campbell (A.N.I.C.). South Australia: At light, Goyder Lagoon Ruins, 28 July 1957 B. Daily; Fowler Bay (S.A.M.).

Plate 22 fig. C shows a dark example, plate 23 fig. C a chocolate coloured specimen from Darwin.

***Dieuches hirsutus* sp. nov.**

Plate 21, fig. C

Head dark ferruginous brown; antennae dark ferruginous brown (colour of terminal segment unknown); rostrum ferruginous brown.

Pronotum with lateral carinae dark brown anteriorly and posteriorly and ochraceous in centre; disc dark brown to black with pale marks posteriorly consisting of an ochraceous central streak and two pale spots on each side near transverse impression.

Scutellum dark brown to black with apex pale, no pale spots on disc. Legs with base of femora ochraceous; coxae and most of femora dark brown to black; tibiae dark ferruginous and tarsi ferrugino-ochraceous.

Hemelytra ochraceous with dark brown to black markings; clavus dark brown with a pale basal streak; corium dark brown with a pale subapical spot, three basal pale streaks and a pale central spot; subapical pale spot with inner angle acute, basal side concave and apical side convex; membrane dark brown to black with apical third to half pale and with a luteous spot near apical angle of corium and a luteous spot on base of inner curved vein.

Abdominal sterna V and VI with lateral pale spots.

Dorsum and legs with long outstanding hairs; antennal ratio 18: 38: 35: ?; third antennal segment thicker than second and both densely hirsute; rostrum reaching posterior coxae. Pronotum with broad lateral carinae; lateral margins convergent anteriorly and concave at level of transverse impression on disc; pronotal width: length, 47: 42. Fore femora with a long subapical ventral spine.

Total length: Female 10.0 mm.

Type: Holotype female, Northern Territory, Darwin G. F. Hill (S.A.M.).

Paratype: Female, same data (G. G. E. Scudder, Vancouver).

In general appearance similar to *D. finitimus* Van Duzee, but with distinct upstanding hairs on dorsum and on femora.

***Dieuches finitimus* Van Duzee 1940**

Plate 24, fig. A

Dieuches finitimus Van Duzee 1940, Pan-Pacif. Ent. 16: 184.

Dieuches finitimus Scudder 1958, Nat. Hist. Rennell Is., B.S.I. 2: 138.

Head dark ferruginous brown; antennae ferrugino-ochraceous with apical part of first three segments ferruginous; fourth antennal segment with apical half dark brown and basal half luteo-ochraceous; rostrum ferruginous with apex brown.

Pronotum with lateral carinae pale ochraceous with extreme anterior and posterior parts brown to black; disc dark ferruginous brown to black with pale markings on posterior lobe consisting of a central longitudinal ochraceous streak and two ochraceous spots, on each side of streak near transverse impression.

Scutellum dark ferruginous brown to black with apical and two lateral luteo-ochraceous spots.

Legs ochraceous with coxae and apical half of femora dark brown; apical half of fore tibiae and most of middle and hind tibiae dark brown; tarsi ferrugino-ochraceous.

Hemelytra ochraceous with dark brown markings; apical two-thirds of clavus, most of apical half of corium and basal half of corium partially, dark brown; corium with a distinct transversely elongate subapical pale spot, with inner angle somewhat acute, basal side slightly concave and apical side convex; basal half of anterior margin on corium seen from side, without fuscous spots and with apex slightly pale.

Venter with postero-dorsal corner of metapleurae ochraceous; abdominal sterna V, VI and VII with lateral pale spots.

Insects not greatly hirsute; antennal ratio 13: 28: 28: 30; rostrum reaching middle coxae. Pronotum with broad lateral carinae; lateral margins convergent anteriorly and more or less straight; disc with a distinct transverse impression; pronotal width: length, 38: 30. Hemelytra almost reaching apex of abdomen.

Total length: 7.4 mm.

Distribution: Solomon Is., New Guinea, New Britain, and Australia.

Australian records: Queensland: Alice River, Mjöberg (Stockholm); 1 male, Horn Is., 2 April 1940 R. G. Wind. Torres St.: 3 males, 1 female, Prince of Wales Is., 3 Nov. 1939 R. G. Wind; 3 males, same data but 23 Nov. 1939 (C.A.S.). The figure is based on a series from Misima Island, Louisiade Archipelago, collected by the Rev. H. K. Bartlett and in the S. A. Museum.

Somewhat similar to *D. obscuripes* (Walker), but with two pale spots on each side of pale median streak on posterior lobe of pronotum, instead of just one on each side, as in *obscuripes*.

***Dieuches torpidus* sp. nov.**

Plate 24, fig. B

Head dark brown with anterior part rather ferruginous; antennae ferruginous with fourth segment basally ochraceous and apically dark brown; rostrum ferrugino-ochraceous with first segment and apical segment dark brown.

Pronotum with lateral carinae ochraceous, narrowly margined with black and posteriorly fuscous; disc dark brown with ferrugino-ochraceous markings posteriorly consisting of a short median longitudinal streak and two spots on each side near transverse impression.

Scutellum dark brown with apex and two obscure lateral spots, ferrugino-ochraceous.

Legs ferruginous brown with base of middle and hind femora and middle and hind trochanters, ochraceous.

Hemelytra dark brown and luteo-ochraceous; corium with a subapical pale L-shaped spot and a C-shaped mark proximally; inner angle of corium with a pale triangular spot; basal half of corium with anterior margin ochraceous and margined with dark brown, with a longitudinal streak and two spots on each side, in middle, and with two or three pale spots along claval suture; clavus with a pale streak along basal party of suture margin and with an obscure ferruginous spot basally; basal half of anterior margin of corium, seen from side, with a median fuscous spot; membrane fuscous and with an obscure basal pale area.

Venter with coxal covers and postero-dorsal corner of metapleurae pale ferruginous; abdominal sterna IV, V, VI with distinct lateral ochraceous patches and sternum VII with indistinct pale spots laterally. Dorsum of insect not hirsute; antennal ratio 20-23: 34-38: 35-37: 35-40, with third segment thicker than fourth and densely covered with short semi-erect hairs; rostrum reaching middle coxae. Pronotum with broad lateral carinae; lateral margins not convergent anteriorly, but deeply concave at level of transverse impression on disc; pronotal width: pronotal length, 38-46: 39-43, that is sometimes longer than broad. The longest ratio is 38-43 (in the type), the widest ratio is 46:40; these differences are due to differences in development of the wings. Scutellum with basal half deeply excavate. Fore femora with about eight small spines. Hemelytra with much of basal area and a subapical spot appearing "frosted"; membrane reaching middle of tergum VII but not beyond.

Total length: 8.5 mm.

Type: Holotype male, New Guinea, Madang, W. Lohe (S.A.M.).
Allotype female, Finschhafen, Apr. 1944 E. S. Ross. *Paratypes*: 2 males, Finschhafen, Apr. 1944; 1 male, 1 female, same loc., 20 Apr. 1944; 2 females, same loc., 21 Apr. 1944; 1 male, same loc., 15 May 1944, all E. S. Ross (C.A.S.).

This species differs from *obscuripes* and all other specimens by the shape of the pronotum and the colour of the hemelytra.

Dieuches scutellatus Distant 1904

Plate 24, fig. C

Dieuches scutellatus Distant 1904, Ann. Mag. nat. Hist. (7)13: 268.

Head black; antennae brown to black with a distinct whitish sub-basal annulation to terminal segment; rostrum ferruginous brown with black apex.

Pronotum with lateral carinae ochraceous and with extreme posterior part black and anterior part obscurely fuscous; disc black with ferrugino-ochraceous markings posteriorly consisting of a short median longitudinal streak and one spot on each side near transverse impression.

Scutellum black with apex ochraceous and with two lateral ferrugino-ochraceous spots.

Legs brown to black with basal part of middle and hind femora ochraceous.

Hemelytra ochraceous and dark brown to black; corium with a distinct subapical pale spot and in basal half with two pale spots on anterior margin and two pale spots near claval suture; clavus with two short pale streaks; subapical pale spot of corium with inner angle somewhat acute and with both basal and apical margins convex; basal half of anterior margin of corium, seen from side, with a median fuscous spot and base black; membrane fuscous with a pale apex.

Venter with postero-dorsal corner of metapleurae ochraceous; abdominal sternum V with distinct lateral ochraceous patch and sternum VI sometimes with an obscure ferrugino-ochraceous small spot laterally.

Insects not hirsute; antennal ratio 11: 25: 25: 28; rostrum reaching middle coxae. Pronotum with broad lateral carinae; lateral margins convergent anteriorly and concave at level with transverse impression of disc: pronotal width: pronotal length, 42: 32. Fore

femora with four or five short spines in anterior row. Hemelytra just reaching apex of abdomen.

Total length: 7.3 mm.

Distribution: Australian and possibly New Guinea.

Australian records: North-western Australia:—Derby, Kimberley District and Noonkanbah, Mjöberg (Stockholm); Flora Valley Stn., 12 Oct. 1953 N. B. Tindale (G. G. E. Scudder, Vancouver). Onslow, Nov. 1955 E. T. Smith; North-west Australia, from C. French Jn. Collection (N.M.). Central Western Australia: 3, Pilgangoora, 5, 6 & 9 May 1953 N. B. Tindale; Tambrey, 24-26 July 1958, F. J. Mitchell (S.A.M.) Tambrey Stn., 28 July 1958 R. P. McMillan (W.A.M.). Northern Territory: 2, Katherine, 26 Sept. 1953, G. F. Gross; 2, Tennants Ck. J. K. Field; Finke R., MacDonnell Ranges, Capt. S. A. White; Macdonald Downs, S.A. Museum Exped. Aug. 1930; Haast Bluff Stn., 2,000 feet, 62° F., at mercury vapour light, N. B. Tindale (S.A.M.). Queensland: Laura and Alice River, Mjöberg (Stockholm). Townsville Distr. (S.A.M.); 2, Almaden, Chillagoe, 10 Oct. & Oct.-Nov. 1927, W. D. Campbell (A.M.). South Australia: Madigan Gulf, L. Eyre, 5 Nov. 1955, at light, E. T. Giles (G. G. E. Scudder, Vancouver).

Similar to *D. distanti* Bergroth, but with anterior part of lateral pronotal carinae pale instead of broadly black anteriorly. A very variable species; the hind lobe disc of the pronotum is generally black or concolorous with the disc of the fore lobe. However examples occur with the fore lobe black on the disc and the hind lobe chocolate. Several examples also have three colours on the corium, black or deep brown, ochraceous and luteous; such an example is figured.

***Dieuches enigmaticus* sp. nov.**

Plate 21, fig. D

Head brown-black; antennae ferrugino-ochraceous with apical part of segments fuscous, the fourth segment quite brown with a basal pale annulation; rostrum with basal segment brown, other segments ferrugino-ochraceous.

Pronotum with lateral carinae pale except for extreme posterior corner; disc brown-black with three spots posteriorly near transverse impression.

Scutellum brown-black with an apical and two lateral pale spots.

Legs ochraceous with apical part brown-black and with a distinct pale subapical spot; subapical spot to corium with inner angle rather

obtuse and sides convex; basal half on anterior margin of corium seen from side, with three or four fuscous spots; membrane fuscous with tip pale.

Abdominal sterna V and VI with lateral pale spots. Fore femora and midfemora in male with a row of short spines beneath, hind femora with several fine spines.

Anterior lobe of pronotum, scutellum, and a long patch on head between eyes, finely punctate.

Total length: 7-8 mm.

Type: Northern Australia, Marrakai Stn., 28-31 July 1929 I. M. Mackeras & T. G. Campbell (A.N.I.C.). *Paratypes*: 1 female, Western Australia, Wyndham, 4 Oct. 1929 T. G. Campbell; 1 female, Western Australia, Wyndham, 16-28 Feb. 1931 H. J. Willings; 1 male, Monte Bello Is., Trimouille Is., Cocoa Beach, 10 Nov. 1953 T. G. Campbell (A.N.I.C.).

Similar to *D. scutellatus* Distant, but slightly smaller and with basal half of anterior margin of corium, seen from side, with more than a single fuscous spot.

***Dieuches distanti* Bergroth 1916**

Plate 22, fig. B

Dieuches distanti Bergroth 1916, Proc. Roy. Soc. Vict. (n.s.) 29: 10.

Head dark brown to black; antennae dark ferruginous to brown, the fourth segment with a basal pale annulation; rostrum ferruginous-ochraceous with apex brown.

Pronotum with lateral carinae pale only in middle; disc dark brown to black, the posterior part with a short median pale longitudinal streak and usually one pale spot on each side.

Scutellum dark brown to black; sometimes with apical and lateral pale spots.

Legs ochraceous with coxae and apical part of femora dark brown to black; tibiae fuscous; apex of tarsi brown.

Hemelytra ochraceous with apical half of clavus and corium dark brown to black, the latter with a distinct pale subapical spot; subapical pale spot of corium with inner angle obtuse, and with both basal and apical sides convex; basal half of anterior margin of corium, seen in side view, with a single fuscous spot; membrane fuscous with an apical pale spot.

Abdominal sterna V and VI with lateral pale spots.

Insects not distinctly hirsute; antennal ratio 14: 30: 32: 33; rostrum reaching middle coxae. Pronotum with broad lateral carinae; lateral margins convergent anteriorly and more or less straight; disc with transverse impression; pronotal width: length, 43: 32. Fore femora with seven to nine short spines in anterior row; middle femora in male with six or seven spines, the basal four longer than apical ones. Hemelytra just reaching tip of abdomen.

Distribution: Northern Australia.

Australian records: Western Australia:—Pilgangoora Well, 8 June 1953 N. B. Tindale (G. G. E. Scudder, Vancouver). Pilgangoora, 5 Apr. 1953 N. B. Tindale; Meekathara-Billahna Pool, Canning Stock Route Expedition, Apr. 1930-Aug. 1931 (S.A.M.). Northern Territory: Areyonga, 1958 A. G. Woolcock; Finke Crossing, 1933, J. W. Rose (S.A.M.). Queensland: Mt. Isa, Jan. 1954 Lamberts (N.M.); Clermont, Dr. K. K. Spence (A.M.).

In general appearance similar to *D. oceanicus* (Distant) but with anterior part of pronotal carinae distinctly and broadly fuscous instead of white.

***Dieuches maculicollis* (Walker 1872)**

Plate 22, fig. A

Rhyparochromus maculicollis Walker 1872, Cat. Het. B.M. 5: 111.

Dieuches atricornis Stål 1874, K. svenska. Vetensk. Akad. Handl. 12(1): 161.

Dieuches maculicollis Distant 1901, Ann. Mag. nat. Hist. (7)8: 508.

Dieuches maculicollis Scudder 1962a, Canad. Ent., 94(7): 767.

Head, rostrum and antennae, including fourth antennal segment, dark brown to black.

Pronotum with lateral carinae dark brown to black on anterior and posterior thirds and ochraceous in middle; disc dark brown to black with posterior pale markings consisting of a short median longitudinal streak and two ochraceous spots on each side near transverse impression.

Scutellum dark brown to black with apical angle ochraceous and with two lateral pale spots.

Legs dark brown to black with base of femora and trochanters of second and third pairs of legs only ochraceous.

Hemelytra ochraceous and dark brown or black; clavus dark with a basal pale streak; corium with a subapical pale spot and basal half with anterior margin pale and with four or five pale spots; subapical pale spot of corium with inner angle more or less acute and basal and apical sides convex; basal half of anterior margin of corium, seen from side, without fuscous spots; membrane opaque yellowish with basal and apical margins broadly dark brown.

Venter with postero-dorsal corner of metapleurae ochraceous; abdominal sternum V laterally with distinct ochraceous spot and sternum VI laterally with obscure small ferruginous spots.

Insects not hirsute; antennal ratio 12: 25: 27: 30; rostrum reaching middle coxae. Pronotum with broad lateral carinae; lateral margins hardly convergent anteriorly and more or less straight; pronotal width: length 33: 29; disc with distinct transverse impression and with anterior lobe distinctly convex. Fore femora with five or six small spines and one or two large subapical spines. Hemelytra almost reaching apex of abdomen.

Total length: 6.6 mm.

Distribution: Australia.

Australian records: Queensland:—1 female, Nangram Lagoon, 12 m. E & 3 m. N of Condamine, 16 Aug. 1954 R. A. Stirton (C.A.S.); 2 males, Somerset Dam, 24 Oct. 1953 T.E.W.; Deception Bay, 25 March 1954 Y. P. Beri; Brisbane, Feb. 1954 N. J. Thompson (U.Q.); Cunnamulla, 1, 17 Dec. 1940, 2, Oct. 1941, 1, Nov. 1941 N. Geary (A.M.). New South Wales: Sydney, Apr. 1931 K. K. Spence; Como, Dec. 1951 J. Freeman (A.M.). Australian Capital Territory: Molongolo, 4 Apr. 1930 L. Graham (A.N.I.C.). Victoria: Mildura, Feb. 1955 C. Flynn (U.Q.), 5, Kerang, 28-30 Apr. 1946 R.E.T.; Redcliffs, presented 18 Apr. 1925 A. S. Cudmill (N.M.). South Australia: Adelaide distr., Mar. 1920 W. E. Hodson; Prospect, 5 Aug. 1954 G. F. Gross (G. G. E. Seudder, Vancouver); 2, same data; Prospect, 22 Mar. 1952 G. F. Gross; Prospect, 6 Sept. 1952 G. F. Gross; 7, Highgate, 23 July 1959 E. C. Lindsay; Wild Horse Plains 10-16 Apr. 1956 C. J. Martin; Upper Arcoona Ck., Gammon Ranges, 16 Sept. 1956 G. F. Gross; Italowie Gorge, 30 Oct. 1955 E. T. Giles; no locality Mar. 1921 (S.A.M.). At roots of vine, Barossa Valley, 2 Apr. 1949 (W.A.R.I.).

A species easily recognized by the completely black terminal segment to the antennae and black bases of the fore femora.

***Dieuches notatus* (Dallas 1852)**

Plate 23, fig. A

Rhyparochromus notatus Dallas 1852, List. Hem. B.M. 2: 569.*Dieuches notatus* Stål 1874, K. svenska Vetensk. Akad. Handl. 12(1): 161.

Head dark brown to black with two small ferruginous spots on vertex on level with anterior margin of eyes; antennae dark brown to black with a basal ochraceous annulation to fourth segment; rostrum ferruginous to dark brown.

Pronotum with lateral margin dark brown to black in anterior and posterior thirds and ochraceous in middle; disc on anterior half black; posterior half of disc ochraceous with fuscous punctures, with humeral angles black and with four longitudinal fuscous streaks.

Scutellum black with apex ochraceous and with two lateral ferrugino-ochraceous spots.

Legs ochraceous with coxae and most of femora dark brown to black; fore and middle tibiae with apex and base fuscous, the hind tibiae more or less completely ferruginous to dark brown; tarsi with apical part of tarsomeres fuscous, the posterior tarsi almost completely dark ferruginous.

Hemelytra ochraceous with ferruginous and dark brown to black markings; clavus with punctures and irregular intervening areas ferruginous, the extreme base black; corium with a distinct pale sub-apical spot, apical margins and an almost complete transverse band, black; basal half of corium with punctures and streaks dark ferruginous brown; subapical pale spot to corium if continued to inner angle of corium then with inner angle of spot acute, if not continued to inner angle of corium then with inner angle of spot truncate; basal margin of spot slightly concave, the apical margin straight; basal half of anterior margin of corium, seen from side, without fuscous spots; membrane completely fuscous.

Abdominal sterna V, VI, and VII with lateral pale spots.

Insects not hirsute; antennal ratio 15: 27: 27: 34; rostrum reaching middle coxae. Pronotum with lateral carinae very narrow towards anterior; lateral margins strongly convergent anteriorly and slightly concave at level of transverse impression of disc; pronotal width: length 38: 33. Fore femora with about six small and one large ventral spine. Hemelytra almost but not quite reaching apex of abdomen.

Total length: 6.9-8 mm.

Distribution: Australia, Tasmania, Lord Howe Island, and New Zealand.

Australian records: Queensland:—13, Brisbane, Mar. 1957 J. H. Martin; same loc., 10 Feb. 1951 M. Carpenter; same loc., 8 June 1951 J. Denmead; same loc., Aug. 1955 N. J. Thompson; same loc., 3 Mar. 1956 S. Sekon; Lawes, 20 Feb. 1956 W. F. William; Tambo, 16 Aug. 1955 B. R. Grant; Mbore, Jan. 1951 Lipsett; Beaudesert, 5 Jan. 1954 R. E. Harrison; Stanthorpe, 1 June 1956 J. Bonner (U.Q.); same loc.; Dalby, Mrs. F. H. Hobbler; Mt. Tambourine, A. M. Lea; Cunnamulla, H. Hardeastle (S.A.M.); same loc., Oct. 1941 N. Geary; Miles, 10 Jan. 1939 N. Geary; Olsen's Caves, Rockhampton, Oct. 1924 A. Musgrave; Rockhampton, Oct. 1926 A. Musgrave; Warwick, Sept. 1947 Mrs. Miller, (A.M.) 1 male, 5 females, Roma, 5 Aug. 1954 R. A. Stirton; 1 male, Talooka Stn., 48 miles north of Roma, 6 Aug. 1954 R. A. Stirton (C.A.S.). New South Wales: Canowindra 7 Jan. 1955 F. E. Wilson (S.A.M.) Caldwell, 30 Dec. 1951, V. Robb; Deniliquin, 1914 B. Reeves (N.M.) 5, Bombala, 4 Mar. 1931 Rev. A. J. Barret; Bogan River, Sept. 1931 J. Armstrong; same loc. & collector, no date; Nyngan 7 Apr. 1931 J. Armstrong; Hornsby, G. Gibbons; Sydney, 24 May 1925 W. W. Froggatt (A.M.); Sydney, ridge between Mossman's Bay and Middle Harbour J. Langhans (G. G. E. Scudder, Vancouver); 4, Gunnedah, 23 Aug. 1950 A. Dyce; 2, Pilliga, 1925 W. W. Froggatt; 5, Forbes, 20 May 1925 and 24 May 1925 W. W. Froggatt; Tweed R., 17 July 1904 W. W. Froggatt; Coolibah, 20 Oct 1905 W. W. Froggatt; nr. Bourke, 26 Oct. 1949 S. J. Paramanov (A.N.I.C.). Australian Capital Territory: 3, Canberra, Jan. & May 1930 J. Evans (A.N.I.C.). Victoria: Bamawn, W. F. Hill (S.A.M.) 10, Studley Park, 2 Aug. 1923 J. E. Dixon; 3, Kerang, 2 May, 25 Aug., 3 Oct. 1946 R. E. Tillyard; Redcliffs, 18 June 1925 A. S. Cudmore; Fern Tree Gully, J. E. Dixon; loc.?[?] (N.M.) Melbourne (Stockholm). Tasmania: 3 (one a nymph), E. point of Babel I., 16 Mar. 1960 T. G. Campbell (A.N.I.C.); Launceston (S.A.M.). South Australia: 2, Whyalla, 16 & 23 Aug. 1947 D.S. (N.M.); Underdale, 18 Jan. 1959 G. F. Gross (G. G. E. Scudder, Vancouver); 2, same loc & collector, 1 & 21 Jan. 1959; Fulham Gardens, Jan. 1959 G. F. Gross; "Kurlge", Blackwood, 850ft., at mercury vapour light, 84° F., 27 Feb. 1957 N. B. Tindale; Blackwood, 13 Dec. 1959 M. Kenny; Mylor, 5 May 1948 G. F. Gross; 2, Coomandook, 4 June 1948 G. F. Gross; 2, Maitland, E. R. Waite; Curramulka, 3 Dec. 1954, G. F. Gross; Kielpa, Aug. 1958, P. W. Greenfield; Nth. End,

Pt. Lincoln, 20 Nov. 1957 M. Garrick (S.A.M.). Western Australia: 2, Warren River, W. D. Dodd (S.A.M.); Lord Howe I., 2, A. M. Lea (S.A.M.).

The species is also represented by a series of six specimens from New Zealand collected amongst litter on the ground at P.D.P. Owairaka, Auckland, 19 May 1960 Mrs. B. M. May (Plant Diseases Division, D.S.I.R.).

A distinct species recognized by the slightly brachypterous condition, the very narrow pronotal carinae, usually pale truncate inner angle to spot on corium subapically, and the two ferruginous spots on vertex.

***Dieuches nudus* sp. nov.**

Plate 23, fig. B

Similar to *D. notatus* (Dallas) but with head lacking the pale spots; with a narrower pale annulation to fourth antennal segment; with antennal ratio 18: 35: 32: 38; pronotal lateral carinae broad anteriorly and not distinctly narrowed; lateral margins of pronotum not distinctly convergent anteriorly and more or less straight; posterior half of pronotal disc more or less completely pale and without fuscous markings except on humeral angles; corium without distinct fuscous markings except in apical half; inner angle of subapical pale spot to corium always truncate; hemelytra reaching only onto tergum VI and not beyond; fore femora in both sexes with two prominent spines, one near apex, and a series of smaller spines. Venter with coxal covers and posterior margin of metapleurae pale.

Total length: Male 7.7 mm., female 8.5 mm.

Loc. Holotype male, Whittata, Andamooka Ranges, South Australia, 22 Aug. 1948 G. F. Gross (S.A.M.). *Allotype* female, Whyalla, South Australia, 7 Sept. 1947 D.S. (N.M.). *Paratypes*: South Australia:—2 females, Whittata, Andamooka Ranges, 20 Aug. 1948 G. F. Gross; 1 female, same loc., 22 Aug. 1948 G. F. Gross; 1 male, Andamooka Ranges, Aug.-Sept. 1948 G. F. Gross; Leigh Ck., (S.A.M.) 4 males, 3 females, Ooldea, July 1921 J. A. Kershaw (N.M.) 1 male, 2 females, same data (G. G. E. Scudder, Vancouver). Victoria: 1 male, 2 females, Kewell, Nov. 1892 (N.M.). Western Australia: 2 males, Clampton 46—1922 & 1923 (W.A.M.). Northern Territory: Double Punch Bowl, Henbury, 15 Oct. 1953 G. F. Gross (S.A.M.).

Dieuches longicollis (Dallas 1852) comb. nov.*Rhyparochromus longicollis* Dallas 1852, List. Hem. B.M. 2: 570.

Plate 19, figs. B, C

The badly damaged type of this species is said to come from Australia but we have seen no other specimens from here. In the Paris Museum is a female specimen purported to be the same species from Sumatra (Padang), and in the South Australian Museum is a male from Timor which appears to have the necessary characteristics of the species, but is at first sight rather different in appearance to the Sumatran specimen.

A close comparison of the basic elements of the colour pattern of the Sumatran and the Timor examples suggests that the two may be the same species. A comparison of various dimensions in comparison to one measurement (the total length) adjusted to the same value (1,000) gives a close correlation, except that the Timor example has a much shorter rostrum; we are of the opinion that these are the same species. Mr. R. Izzard of the British Museum kindly supplied a similar set of measurements from the head and thorax of the type (all that remains) in the British Museum. These measurements do not agree as closely, especially in that the thorax is longer than wide, whereas in the other two it is wider than long. Nevertheless as the one species appears to occur with fair differences from opposite ends of the Indonesian Archipelago it seems reasonable that an Australian race of the same species would be more divergent. The Sumatran and Timor examples are therefore considered to be probably races of the Australian *longicollis* and both are figured (Timor plate 19 fig. B; Sumatra plate 19 fig. C).

The actual measurements considered in the comparison were:—

<i>Example</i> Measurement	<i>Sumatra</i>	<i>Timor</i>	<i>Type</i> (Australia)
Length Antennal Segment I	1.30mm.	1.01mm.	missing
Length Antennal Segment II	2.38mm.	1.63mm.	missing
Length Antennal Segment III	2.19mm.	1.63mm.	missing
Length Antennal Segment IV	missing	2.38mm.	missing
Length Rostral Segment I	1.23mm.	0.63mm.	1.40mm.
Length Rostral Segment II	1.31mm.	0.81mm.	1.87mm.
Length Rostral Segment III	1.19mm.	0.69mm.	} 2.13mm.
Length Rostral Segment IV	0.63mm.	0.34mm.	
Length of head	1.30mm.	1.16mm.	1.73mm.
Width of head across eyes	1.30mm.	1.19mm.	1.60mm.
Length of Pronotum	1.88mm.	1.63mm.	2.93mm.
Width of Pronotum	2.25mm.	1.84mm.	2.80mm.
Total Length	9.18mm.	7.86mm.	app. 10.5mm. (Calc. from Dallas' cited length)

The adjusted measurements for closer comparison are:—

<i>Example</i> Factor	<i>Sumatra</i> Eyepiece Divisions ×0.734	<i>Timor</i> Eyepiece Divisions ×0.63	<i>Type</i> Izzard's Eyepiece Divisions ×1.05
Measurement			
Length Antennal Segment I	142	129	missing
Length Antennal Segment II	260	230	missing
Length Antennal Segment III	240	230	missing
Length Antennal Segment IV	missing	302	missing
Length Rostral Segment I	132	90*	133
Length Rostral Segment II	143	103*	178
Length Rostral Segment III	128	87*	} 203
Length Rostral Segment IV	68	41*	
Length of head	142	148	165
Width of head across eyes	142	150	152
Length of pronotum	202	206	279*
Width of pronotum	243	233	269*
Total Length	1,000	1,000	1,000

Measurements which are noticeably divergent from the other two are marked *.

The description of the species given here is based on the Sumatran and Timor examples.

Head black; antennae black with an ochraceous sub-basal annulation to fourth segment; rostrum brown to black with second segment ochraceous.

Pronotum with lateral carinae ochraceous; disc black with two luteous spots on anterior margin or absent (Timor example) and posterior part with luteous or ochraceous markings consisting of a pale spot on transverse impression laterally, a median longitudinal narrow streak and a pale streak on each side, sometimes divided into anterior and posterior spots.

Scutellum black with apex luteous and with two lateral luteous or ferrugino-ochraceous spots.

Legs ferrugino-ochraceous with base of femora and trochanters ochraceous; apical part of femora dark brown to black; base and apex of tibiae fuscous.

Hemelytra ochraceous and dark brown to black; clavus fuscous with scutellar and commissure margins narrowly pale and with a pale streak emitted from base; corium with most of anterior margin pale and with a pale subapical spot, the latter constricted in middle; base of corium with a long streak and a spot near claval suture, the streak often incomplete; another streak between this and the luteous exterior margin with a spot on either side behind level of apex of scutellum,

the outer spot continuous with the pale costal margin. Membrane fuscous and without a pale apical spot.

Venter with lateral parts of sterna V to VII predominantly and narrowly pale.

Dorsum of insect non-hirsute; elongate insect with relatively long legs and antennae; rostrum reaching to or almost to hind coxae. Pronotum appearing rather elongate, lateral carinae broad and distinct; lateral margins convergent anteriorly and slightly concave; disc with distinct transverse impression behind middle. Fore femora (female) with about eight small and a large subapical spine ventrally in anterior row; middle femora with five or six small spines. Hemelytra reaching to, but not beyond middle of tergum VII.

Total length: 7.9-10.5 mm.

Distribution: Sumatra, Timor and Australia.

Specimens seen: 1 female Sumatra, Padang (Paris Museum); 1 male Uato Lari, Portuguese Timor, 19 May 1959 I. B. Freytag (S.A.M.).

This species is easily recognized by relatively long legs, antennae and general appearance and by the constricted pale subapical spot to the corium. The species is rather similar to *Narbo biplagiatus* (Walker), but may be distinguished by having distinct laminate lateral carinae to the pronotum.

Elasmolomus Stål 1872

Elasmolomus Stål 1872, Öfvers. Vetensk. Akad. Förh. 1872 (7): 58.

Elasmolomus Stål 1874, K. svenska Vetensk. Akad. Handl. 12(1): 160.

Aphanus Barber 1958 (*nec* LaPorte), Insects of Micronesia 7(4): 215.

Elongate oval insects; head triangular with antennal tubercles visible from above; eyes more or less in contact with anterior margin of pronotum; finely punctate; antennae with first segment exceeding apex of head.

Pronotum wider than long with anterior half of disc dark brown or black and posterior half pale with fuscous punctures; disc sometimes with a median transverse impression, but lateral margin of pronotum with a distinct laminate carina and gently convex throughout; posterior margin slightly concave; distinctly punctate with punctures on anterior half of disc smaller than those on posterior part.

Scutellum longer than wide; dark brown with an apical V-shaped pale mark; distinctly punctate; basal half of disc shallowly excavate.

Legs with fore femora moderately swollen and with a few small ventral well spaced spines; tibiae with distinct outstanding stout setae; posterior tarsi with basal tarsomere more than twice combined length of the two distal tarsomeres.

Hemelytra pale with brown mottling and punctures, the anterior margin with a distinct fuscous bar in apical half and with apical angle fuscous; clavus with more than three rows of punctures; corium rather densely punctate; apex of membrane just reaching or almost reaching tip of abdomen.

Venter dark brown with coxal covers and postero-dorsal corner of metapleurae pale; sterna laterally usually with pale spots.

Type species: *Cimex sordidus* Fabricius 1787.

Key to Australian species of *Elasmolomus*.

1. Over 6.5 mm.; pronotal disc with distinct transverse impression *sordidus* (Fab.)
- Under 6.5 mm.; pronotal disc without a distinct transverse impression 2
2. General colour brown or ferruginous, 6-6.5 mm. long *papuanus* (Dist.)
- General colour black, 5.5-6 mm. long *v-album* (Stål)

***Elasmolomus sordidus* (Fab. 1787)**

Plate 21, fig. A

Cimex sordidus Fabricius 1787, Mant. 2: 302.

Lygaeus sordidus Fabricius 1794, Ent. Syst. 4: 164.

Lygaeus sordidus Fabricius 1803, Syst. Rhynch.: 231.

Rhyparochromus sordidus Dallas 1852, List. Hem. B.M. 2: 566.

Beosus sordidus Stål 1868, Hem. Fabr. 1: 78.

Pachymerus (*Elasmolomus*) *sordidus* Stål 1874, K. Vet. Akad. Handl. 12(1): 161.

Aphanus sordidus Distant 1903, Fann. Brit. Ind. Rhynch. 2: 79.

Aphanus littoralis Distant 1918, Ann. Mag. nat. Hist. (9)2: 262.

Aphanus sordidus Hoffmann 1932, Lingnan J. Sci. 11(1): 130.

Aphanus littoralis Corby 1947, Bull. ent. Res. 37: 611.

Aphanus littoralis Lindberg 1958, Comment. biol. Helsingf. 19(1): 66.

Aphanus sordidus Barber 1958, Insects of Micronesia 7(4): 216.

Head dark brown; antennae ochraceous with a few spots at apex of first segment, apical parts of second and third, and apical half of fourth, dark brown; rostrum ferrugino-ochraceous with apex dark brown.

Pronotum ochraceous with anterior half of disc and punctures, dark brown; lateral carinae and posterior part of pronotum ochraceous, the extreme posterior part of carinae fuscous, and the anterior part of carinae also sometimes fuscous.

Scutellum dark brown with apical half with a more or less distinct broad ochraceous V-shaped area and with fuscous punctures.

Legs ochraceous with apical half to third with two fuscous annulations, these sometimes united; apex of tibiae and tarsi frequently fuscous. Hemelytra, like posterior part of pronotum, ochraceous with fuscous punctures and with odd and irregular brown maculae; membrane with brownish maculae and with tip rather pale.

Antennal ratio 15: 31: 30: 31; rostrum reaching middle coxae. Fore femora ventrally with an anterior and posterior row of five or six small spines; fore tibiae of male with two small blunt projections on apical half. Pronotal width: length, 50: 38; disc of pronotum with a distinct transverse impression.

Total length: 7.7-9.2 mm.

Distribution: Throughout the tropical regions of the Eastern Hemisphere. Specimens seen from Cape Verde Is., Senegal, Guinea, Rodriguez Is., Nigeria, Blue Nile, Sudan, Tanganyika, S. India, Indo-China, Laos, Bengal, Burma, Assam, Ceylon, Hong Kong, China, Malay Archipelago, Philippine Is., Okinawa, S. Mariana Is., Sumatra, Moluccas, N. Australia.

Australian records: Northern Territory:—13, C.S.I.R.O. Experimental Station, Katherine, Mar. 1951 W. Arndt; 2, Katherine, 18 Apr. 1956 L. D. Crawford; 4, Berrimah, N.T., 30 Aug. 1956 L. D. Crawford; 1, N.T.A. grounds, Darwin, 29 Sept. 1956 L. D. Crawford (A.N.I.C.); Darwin Botanic Gdns., 6 Jan. 1961 G. F. Gross (S.A.M.). The Waite Agricultural Research Institute in Adelaide is now maintaining an experimental colony of this species originating from a series from Katherine, N.T., taken 16 July 1960, collected by P. W. M.

Our friend and colleague Mr. L. D. Crawford kindly passed on the following notes and extracts from index cards on the habits of

this bug kept while working as an entomologist with the Northern Territory Administration. We quote—

“PEANUT TRASH BUGS”. From Annual Report—Entomologist, N.T.A., 1 July 1955-30 June 1956.

“This local species is universally present wherever peanuts and other oil crops are grown and stored on Northern Territory farms, and it is quite obvious that, left unchecked, as is usually the case, they cause serious losses in oil content, and adversely affect the germination. These bugs are able to extract all the oil out of unshelled peanuts, and have also been observed feeding on sunflower seeds and even sorghum grain. It would seem that the use of control measures should be considered for all oil crops, as these bugs appear to be equally at home out in the field under plants or in storage sheds, where they feed on the bagged peanuts at night time.

“Gammexane dust has been found to control them, but, owing to the risk of tainting, lindane dust would be preferable. The bugs have also been observed in and under matured but unpicked lettuces and Chinese cabbage at the Berrimah Farm. Lygaeid bugs (*Aphanus* spp.) with similar habits have been observed from Nigeria, where they cause poor germination, loss of oil content, and make the remaining oil in the peanuts rancid”.

From Monthly Report, April 1956. (Visit to Katherine.)

“*Peanut Storage.* A number of bags of peanuts kept in the one place for two years in a shed at the N.T.A. Farm were crawling with peanut trash bugs, which were also present on the walls of the shed and the surrounding grass. Most of the peanuts were soft and spongy, being devoid of oil. At night the bugs were observed feeding on unshelled peanuts, and even on sorghum grain. As this pest is common wherever peanuts are harvested and stored, it would appear that it is of considerable importance, and control measures are therefore justified on all peanut farms. It was reported later that a dusting with 4 per cent Gammexane dust had given an adequate control of the bugs at the N.T.A. Farm.”

Extracts from index cards kept while working as Entomologist, N.T.A., Darwin.

PEANUTS, STORAGE.

“Aug. 1955. Bill Alexander, Daily River farmer, reported that the black peanut trash bugs were in swarms amongst his bagged peanuts, and that he was sure that they were living on the oil in the nuts. In previous years he had found that many of the nuts had been dry and shrivelled when he was ready to plant.”

“20 Feb. 1956. Stored peanuts and sorghum at Katherine N.T.A. Farm swarming with black bugs according to manager. Several bags of peanuts at Berrimah sent up from Katherine a month or so previously, showed heavy insect damage . . .” (Mainly Rice Moth and various beetles. Some bugs present.)

“17 Apr. 1956. Inspection of dozen bags of peanuts stored for two years in shed at 205 mile farm (Katherine N.T.A. Farm). Thousands of peanut trash bugs swarming over bags, over tin walls of shed, and in and over nearby machinery and grass. Many of them actively feeding on peanuts, even in the shell. Most of the peanuts are depleted of oil, and are spongy and white.”

“2 May 1956. Peanut trash bugs at Katherine migrating out of sheds to house. Gammexane 4 per cent dust applied heavily around sheds—gave good control.”

PEANUT TRASH BUGS (Lygaeidae).

“These bugs seem to be present wherever peanut trash or peanuts shelled or unshelled are stored on N.T. farms, and it is quite obvious that they cause serious losses in oil content, being able to feed right through the shell into the interior of the kernels. Also observed feeding on sorghum grains.

“RAE (A) 35: 216; 36: 44. *Aphanus* (Lygaeidae) in Nigeria 24 May 1956. Also present in and on ripening sunflower heads at Berrimah N.T.A. Farm.

“27 July 1956. Bugs still present at Berrimah Farm, also being found in lettuce plants.

“8 Aug. 1956. Visit to W. Christie's, Katherine, by T. Officer Moore. Reports that there bugs have been bad, and he considers that growing sunflowers has bred them up. They are even attacking pumpkins, which they honeycomb. When a pumpkin is kicked, large numbers of bugs fly out!” (I can't think of anything else that could have been confused with the bugs by this person.)

“Oct. 1956. Bill Alexander reports that he has had very little trouble with peanut trash bugs this season. Late rains prevented him from either drying out his dug crop, or digging out the remainder. The previous season there were many bugs about, and seed used for planting had numerous small bruises in the kernels.”

SUNFLOWER.

“24 May 1956. Sunflower plants at Berrimah Farm with heads almost mature. Heads infested with moderate number of peanut trash bugs.

“8 Aug. 1956. Sunflower heads from Banyan Farm, Bachelor, very poor. . . . (caterpillar damage) . . . quite a number of peanut trash bugs also in sample.”

PEANUT TRASH BUGS *Aphanus sordidus* (“Groundnut Bug”).

‘Groundnut Cultivation in India.’ Farm Bulletin No. 2. Indian Council of Agricultural Research.

“The Groundnut bug has been reported to cause appreciable damage to groundnut in Bombay. The bugs appear in large numbers and suck the oil out of the kernels both in the field and on the drying floor and occasionally from stored material.”

“Recorded from Madras on stored groundnuts, from Burma in millet heads. From Bombay, attacking groundnuts both during and after the harvest, also infests *Sesamum* and *Carthamus tinctorius*. Attacks may be prevented by putting the nuts into thick sacks immediately they are gathered. RAE (A)5: 101.”

***Elasmolomus v-album* (Stål 1859)**

Plate 19, fig. D

Rhyparochromus v-album Stål, 1859, Kongl. svenska Fregatten Eugenies Resa Om. Jordan etc. 1851-1853. Zool. 1, Insecta: 247.

Pachymerus (Elasmolomus) v-album Stål, 1874, Kongl. svenska Vetensk. Akad. Handl., 12(1): 161.

Aphanus v-album Barber 1958, Insects of Micronesia 7(4): 215.

Aphanus australis Distant, 1901, Ann. Mag. nat. Hist., (7) 8: 502.

Elasmolomus australis Scudder, 1962a, Canad. Ent., 94(7): 767.

Elasmolomus insularis Kirkaldy, 1908, Proc. Linn. Soc. N.S.W., 33: 360.

Aphanus (Elasmolomus) insularis China, 1930, Insects of Samoa 2(3): 138.

We have seen specimens of this species from Java (which Barber equates with the Philippine and Micronesian *v-album*), Timor, North Queensland, and Fiji and all are certainly the same species. The Javan specimen and one Australian tend to be brownish, and the others blacker, but this is hardly a specific difference. The Australian specimens have a general transverse darkening on the corium inwardly from the dark spot on the margin $\frac{2}{3}$ of the way back, but so also does one of the three Timor specimens. In all other respects the specimens are identical. *Pachymerus nerceis* was described from Lifu, but Kirkaldy's generic placing and his description leave little doubt that his material belongs to this species, or to the next.

Head dark brown to black with a silvery pilosity; eyes concolourous, ocelli reddish. First segment of antennae black or brownish with five or six robust spines, one near base on interior margin, another on the same margin about halfway, another between this and apex but on the superior margin, and an apical inner cluster of three or four; second segment yellowish brown vaguely infuscated at apex, third black or brown, pale at base; fourth with basal half pale yellowish brown, apical half blackish or brown.

Pronotum luteous to yellowish brown with anterior lobe within the reflexed margins (except two small luteous points or streaks along anterior margin), two spots on each lateral reflexed margin, one near apex and the other almost at base, and numerous punctations on the hind lobe blackish or brown.

Scutellum black or brown with a prominent V-shaped apical luteous or yellowish brown mark which bears a few fuscous punctations.

Legs yellowish, apices of tibiae, fore femora (except at apex), and a broad sub-apical band to the second and third femora black or dark brown.

Hemelytra luteous to yellowish brown with numerous fuscous punctations for the most part arranged in longitudinal lines but also some areas of scattered punctations. Corium with four distinct black spots two on the exterior margin, one past the half way mark towards the apex and the other at apex, a third spot in the middle of the disc in the apical quarter and a fourth near inner margin and its apex. Membrane fuscous, with elongate lightenings, principally on the veins.

Underside dark brown to blackish with light patches above insertions of coxae, hind upper angles of pro- and metasterna, and extreme lateral margins of abdomen on segments V and VI.

Rostrum reaches mid coxae, mainly pale. Antennal ratio 30-35: 75-82: 65-71: 75-90.

Length: 4.90-5.40 mm.

Specimens seen from Java, Timor, Fiji, Northern Australia.

Distribution: Indonesia, Philippines, Micronesia, Australia, Fiji, Tonga, Solomon Is. (but see note under next species).

Australian records: N.W. Australia, Troughton Is., J. O. Walker (B.M.). 1 female, Claudie R., N. Queensland, May 1914, O. MacGillivray (N.M.). 1 female, Daly R., Northern Territory (S.A.M.).

It may very well be that the distribution of *v-album* is much more extensive than we have claimed here. An examination of the types of *E. transversus* (Signoret) from Madagascar, *E. consocialis* (Dist.) from Seychelles and *E. lineosus* Dist. from Burma and Ceylon, indicates that a single species may be involved, ranging from Africa to Tonga. In this case, the oldest name in the complex appears to be *v-album*. Such a distribution is quite credible in view of the almost parallel distribution of *E. sordidus*. This problem is being considered further by G.G.E.S.

***Elasmolomus papuanus* (Distant 1901) nov. comb.**

Plate 24, fig. D

Aphanus papuanus Distant, 1901, Ann. Mag. nat. Hist. (7)8: 502.

Head chocolate brown, with silvery pilosity. Eyes concolorous, ocelli reddish. First segment of antennae brown with eight or nine robust spines, four or five of them at apex. Second and third apical half of fourth segment a paler brown; basal half of fourth yellowish.

Pronotum luteous yellow with anterior lobe between the reflexed margins (except two obsolete luteous marks on the anterior margin), two spots on each lateral reflexed margin, one at middle of fore lobe and the other almost at the hind angles, and numerous punctations on the hind lobe brown.

Scutellum brown and with a V-shaped apical yellowish mark bearing a few brown punctations.

Legs yellowish, fore femora (except at apex) and a broad sub-apical band on the second and third femora brown.

Hemelytra brownish with numerous fuscous punctations for the most part arranged in longitudinal lines but also some areas of scattered punctations. The basal half of the lateral margins, a pre-apical spot and a basal streak running back paralleling the outer margin paler, yellowish. Membrane pale brown, extreme tip yellowish.

Underside chocolate brown with light patches above insertions of coxae, hind upper angles of pro- and meta-sterna and two small patches on margin of abdomen on segments V and VI.

Rostrum reaching mid coxae, mainly pale. Antennal ratio (to same scale as *v-album*) 42: 95: 85: 100.

Length: Female, 6.25 mm.

Distribution: Australia.

Australian record: 1 female, Dunk Is., North Queensland, Dec. 1932 P. MacIndoe (S.A.M.). Distant's type of this species cannot be found in the British Museum; it came from Peak Downs, also in Queensland. The species described here fits Distant's description fairly well although the head and anterior lobe of the pronotum and the underside of the tibiae and tarsi seem to be rather paler in colour. The size is about right.

This species is very little different to *v-album*; it is 25-30 per cent larger, paler overall and with much less contrast in its coloration. It could be a sub-species of *v-album* were it not that *v-album* already occurs in Queensland. It shares with both the Australian specimens of *v-album* a similar pattern of infuscation in the apical area of the corium, but this is also present in one Timor specimen of the latter species.

This distribution is quite credible in view of the almost parallel distribution of *E. sordidus*.

Note: **Elasmolomus nereis** (Kirkaldy 1905) nov. comb. *Pachymerus nereis* Kirkaldy, 1905, Trans. ent. Soc. Lond.: 347, pl. 18, fig. 7, described originally from Lifu, was recognized by one of us (G.F.G.) from several specimens in the Institut Francais d'Océanie in Nouméa during a recent visit to New Caledonia. It is a distinct species of *Elasmolomus*, and differs from the other three in the very narrow pronotal laminae and more shiny appearance. It is small like *papuanus* and *v-album* and would run down to the former in our key.

Poeantius Stål 1865

Poeantius Stål 1865, Hem. Afr. 2: 154, 163. 1874, Kongl. Vetensk Akad. Handl. 12 (1): 159, 162. Distant, 1903, Faun. Brit. Ind. Rhynch. 2: 85. Breddin 1907, Dtsch. ent. Z.: 208. Bergroth 1918, Philipp. J. Sci., 13 (2 & 3): 84.

Naudarensia Distant, 1904, Faun. Brit. Ind. Rhynch. 2: 86.

Head triangular and with antennal tubercles not visible from above.

Pronotum with narrow lateral laminate carinae; disc with a distinct transverse impression; posterior margin concave; anterior lobe with punctures finer and denser than on posterior lobe.

Scutellum longer than wide; deeply punctate.

Fore femora not greatly swollen and with a small sub-apical spine and a few stiff hairs; posterior tarsi with the basal tarsomere twice as long as the combined length of the two distal tarsomeres.

Hemelytra usually with the apical half more or less castaneous and with a subapical pale spot to corium; membrane if with pale spots, then these basal; clavus with more than three rows of punctures; corium with rather dense punctuation.

Venter dark brown with coxal covers and posterior margin of metapleurae ochraceous.

Type species: *Rhyparochromus nigropictus* Stål, from Africa.

Both Breddin and Bergroth regarded *Poeantius* and *Naudarensia* as synonymous and we are accepting their opinion here. The species described by Distant (1918) as *Naudarensia rolandi* does not belong in the genus *Naudarensia*, but in *Udeocoris* Bergroth which is in the tribe Myodochini (Gross, 1962, Rec. S. Aust. Mus., Adelaide, 14(2): 391).

***Poeantius australopictus* sp. nov.**

Plate 23, fig. D

Female. Head dark brown; antennae pale ferruginous with basal part of first segment, apex of second and most of third, dark brown; terminal segment of antennae without a distinct pale annulation; rostrum dark brown.

Pronotum with anterior half dark brown; anterior margin ferrugino-ochraceous; lateral carinae ochraceous with extreme

posterior part dark brown; transverse impression laterally pale ferrugino-ochraceous, but centre distinctly fuscous; hind lobe of pronotum ochraceous with dense dark brown punctures.

Scutellum dark brown to black with tip ochraceous; apical half laterally slightly ferruginous to brown.

Legs dark brown with base of middle and hind femora ochraceous.

Hemelytra ochraceous with dark brown punctures; clavus with a dark brown longitudinal streak; corium with apical half from inner angle to anterior margin, dark brown, but with slender subapical ochraceous spot; membrane suffused with brown, but with a distinct pale spot near apical angle of corium.

Venter dark brown or slightly ferruginous, with coxal covers and posterior margin of metapleurae ochraceous.

Head inclined ventrally; antennal ratio 5: 13-14: 11-12: 16-17; rostrum almost reaching middle coxae. Pronotum not greatly wider than long, the width: length as 23-27: 20; disc with a distinct transverse impression near middle, ratio length of anterior lobe: length of posterior lobe, as 9-10: 8; lateral margins of pronotum distinctly concave near middle. Hemelytra macropterous.

Total length: 4.5 mm. (4.0-5.0 mm.).

Male. Similar to female, but usually a little smaller. Total length: 4.8 mm.

Type: A female, Queensland, Townsville, 1902 F. P. Dodd (B.M.).
Paratypes: 1 sex undetermined, N.W. Australia, Kimberley district, Mjöberg (Stockholm); 1 female, Queensland, 17 Jan. 1929 Dr. K. K. Spence (A.M.); 1 female, Brisbane, 31 Apr. 1957, S. S. Sekhon (U.Q.); 1 male, 1 female, Normanton, R. Kemp (S.A.M.). 1 male, Northern Territory, Darwin, G. F. Hill (G. G. E. Scudder, Vancouver); 1 female, Townsville, 18 Apr. 1902 W. W. Froggatt (A.N.I.C.).

This species is similar to *P. variegatus* Distant from Africa in general appearance, but has the pronotum less tapering anteriorly and the claval white streak less evident. *P. australopictus* differs from *P. lineatus* Stål from the Philippine Is. by the shape of the pronotum and the coloration of the corium. In the latter species, the pronotum lacks a distinct transverse impression and the fuscous markings on the apical half of the corium do not extend to the anterior margin.

A single brachypterous female specimen in the Naturhistoriska Riksmuseum in Stockholm, with the data 'Queensland, Alice River (Mjöberg)' has the coloration of the corium similar to *P. lineatus* but

on structure of the pronotum appears to be conspecific with the specimens of *australopictus* listed above.

It would appear that the specimens here considered to be a new species were, by Distant (1918) considered to conspecific with *P. lineatus*. This is not so as has been pointed out above.

Narbo Stål 1865

Narbo Stål, 1865, Hem. Afr. 2: 154, 163. 1874, Kongl. svenska Vetensk. Akad. Handl., 12(1): 159. Distant, 1903, Fauna Brit. Ind. Rhyneh., 2: 85. Breddin, 1907, Dtsch. ent. Z., 208. Bergroth, 1918, Philipp. J. Sci., 13 (2 & 7): 84. Barber, 1958, Insects of Micronesia, 7(4): 216. Scudder, 1962a, Canad. Ent., 94(7): 769.

Laxamana Distant, 1906, Ann. Soc. ent. Belg. 50: 416.

Elongate insects; head porrect, eyes removed from anterior margin of pronotum; antennal tubercles clearly visible from above; antennae long and slender; first antennal segment extending beyond apex of head and subequal to head length.

Pronotum wider than long; distinctly punctate; with a conspicuous transverse impression; lateral margins weakly carinate and without a distinct laminate carina; lateral carinae ending abruptly on humeral angles; lateral margins deeply concave at level of transverse impression on disc; posterior margin slightly concave.

Scutellum longer than wide; distinctly punctate; basal half of disc excavate; disc with a vague Y-shaped elevation.

Legs slender and elongate fore femora slender and with a row of short spines along ventral surface; hind tarsi with basal tarsomeres more than twice combined length of the two distal tarsomeres; tibiae with short fine hairs and longer, outstanding, stout hairs; apex of tibiae with a circle of stout setae.

Hemelytra distinctly marked with brown and ochraceous; corium with a more or less distinct pale subapical spot; membrane with a faint pale spot apically; clavus with more than three rows of punctures; corium rather densely punctate.

Abdomen ventrally with a median longitudinal vague keel; male genital capsule with a small tubercle ventrally.

Type species: *Narbo longipes* Stål, from Borneo and Sarawak.

Narbo biplagiatus (Walker 1871)

Plate 20, fig. B

- Noliphus* ? *biplagiatus* Walker 1871, Cat. Het. B.M. 4: 177.
Rhyparochromus terminalis Walker 1872, Cat. Het. B.M. 5: 105.
Dieuches terminalis Lethierry & Severin, 1894, Cat. gén. Hém., 2: 220.
Narbo biplagiatus Distant 1901, Ann. Mag. nat. Hist. (7)8: 510.
Narbo biplagiatus Scudder 1962a, Canad. Ent., 94(7): 769.
Narbo metochoides Bergroth 1918, Philipp. J. Sci. (D) 13: 82. Barber
 1958, Insects of Micronesia 7 (4): 217, fig.

Head dark brown to black; antennae ferrugino-ochraceous with first segment, apical parts of second and third, extreme base and apical part of fourth, dark brown; terminal antennal segment with a broad pale ochraceous annulation; rostrum ferruginous to brown.

Pronotum dark brown to black with lateral margins ochraceous and posterior lobe with a median longitudinal short pale streak on anterior part.

Scutellum dark brown to black with apex ochraceous and with two medio-lateral pale spots.

Legs ferrugino-ochraceous with apical parts of femora, apex of tibiae and tarsi dark brown.

Hemelytra dark brown to black with basal half of anterior margin and a subapical spot to corium, ochraceous; a short basal streak to clavus, an interrupted streak on corium near elaval suture and a median spot to corium, ochraceous; membrane with basal part of some veins and apex, vaguely pale.

Venter dark brown with extreme postero-dorsal corner of meta-pleurae ochraceous and sterna V and VI with lateral pale spots.

Antennal ratio 13: 22: 18: 23; rostrum reaching middle coxae. Pronotal width: length, 23: 17. Fore femora with five or six ventral spines. Total length 10-10.3 mm.

Distribution: Ceram, Gilolo, Philippine Is., Palau Is., New Guinea, New Britain, Celebes, Sumatra, Queensland, Samoa, Caroline Is., Borneo, Sarawak, Assam, Indo-China, Samboangan and Java.

Australian records: New South Wales (Munich); Queensland, Cairns District, A. M. Lea (G. G. E. Scudder, Vancouver); Queensland, F. P. Dodd; Stewart River, Queensland, Jan. Feb. 1927 Hale & Tindale (S.A.M.).

TYPES EXAMINED AND THEIR DEPOSITION.

In the course of this work, the following types have been examined by one of us (G.G.E.S.): their location is noted.

Bosbequius australis Dist. in B.M.

Dieuches consanguineus Dist. in B.M.

D. distanti Bergr. not examined, deposition of type unknown.

D. finitihus Van Duzee in C.A.S.

D. longicollis (Dallas) in B.M.

D. maculicollis (Walk.) in B.M. (*D. atricornis* Stål in Stockholm).

D. notatus (Dallas) in B.M.

D. obscuripes (Walk.) in B.M.

D. oceanicus (Dist.) in B.M.

Elasmolomus nereis (Kirk.) type not examined, deposition unknown.

E. papuanus (Dist.) type not examined, not in B.M.

E. sordidus (Fab.) represented by two specimens, one male, one female, in the collection of Kiel examined by G.G.E.S. in Copenhagen. The female has been selected as lectotype and so labelled.

(*Aphanus littoralis* Dist. also examined in B.M.)

E. v-album (Stål) in Stockholm (*E. insularis* Kirk in Hawaiian Sugar Planter's Association; *E. australis* (Dist.) in B.M.).

Narbo biplagiatus (Walk) in B.M. (*N. metochoides* Bergr. in Helsinki).

ACKNOWLEDGMENTS

This work was done while one of us (G.G.E.S.) was in receipt of a grant from the National Research Council of Canada and University of British Columbia. We wish to thank the following for loan of material and/or permission to study types in their care: Dr. W. E. China, Mr. R. J. Izzard and the Trustees of the British Museum (Nat. Hist.); Mr. H. B. Leech (California Academy of Sciences); Dr. E. Kjellander (Naturhistoriska Riksmuseum, Stockholm); Dr. W. Forster (Zoologische Sammlung des Bayerischen Staates, Munich); Dr. J. W. Evans (Australian Museum Sydney); Dr. L. Hoberlandt (Narodni Museum, Prague); Dr. K. H. L. Key (C.S.I.R.O., Canberra); Mr. A. N. Burns (National Museum of Victoria, Melbourne); Dr. W. D. L. Ride (Western Australian Museum, Perth); and Dr. T. E. Woodward (University of Queensland, Brisbane).

ABBREVIATIONS

The following abbreviations of names are used for collections from which material has been obtained for studies in this paper.

A.M.—Australian Museum, Sydney; A.N.I.C.—Australian National Insect Collection, formerly the collection of the C.S.I.R.O., Division of Entomology, Canberra; B.M.—British Museum (Nat. Hist.) London; C.A.S.—California Academy of Sciences, San Francisco; Munich—Zoologische Sammlung des Bayerischen Staates, Munich; N.M.—National Museum, Melbourne; Prague—Narodni Museum, Prague; S.A.M.—South Australian Museum, Adelaide; Stockholm—Naturhistoriska Riksmuseum, Stockholm; U.Q.—University of Queensland, Department of Entomology, Brisbane; W.A.M.—Western Australian Museum, Perth; and W.A.R.I.—Waite Agricultural Research Institute, Adelaide.

BIBLIOGRAPHY

- Barber, H. G., 1958: Insects of Micronesia, Heteroptera: Lygaeidae. B. P. Bishop Mus. Insects of Micronesia, 7(4): 173-218, 11 text figs.
- Bergroth, E., 1916: New genera and species of Australian Hemiptera. Proc. roy. Soc. Viet. (N.S.) 29(1): 1-18.
- 1918: Studies in Philippine Heteroptera, 1. Philipp. J. Sci. (d) 13(2 & 3): 43-126.
- Breddie, G., 1907: Berytiden und Myodochiden von Ceylon aus der Sammelausbeute von Dr. W. Horn. Rhynch. Het. Dtsch. ent. Z., 34-37 & 203-220, 9 text figs.
- Carpenter, G. H., 1891: Rhynchota from Murray Island and Mabuiag. Sci. Proc. R. Dublin Soc. 1891: 137-146.
- China, W. E., 1930: Hemiptera-Heteroptera. Insects of Samoa 2(3): 1-162, 28 text figs.
- Corby, H. D. L., 1946-47: Aphanus (Hem. Lygaeidae) in stored Ground-nuts. Bull. ent. Res., 37: 609-617, 11 text figs.
- Dallas, W. S., 1852: List of the Specimens of Hemipterous Insects in the Collection of the British Museum. Brit. Mus. Pub., Pt. 2: 369-592, 4 plates.
- Distant, W. L., 1901: Rhynchotal Notes—XI. Heteroptera: Family Lygaeidae. Ann. Mag. nat. Hist. (7)8: 464-486 & 497-510.
- 1903 & 1904: The Fauna of British India including Ceylon and Burma. Rhynchota. 2: i-xvii & 1-242 (1903) and 243-503 (1904). 319 text figs.

- 1904: Rhynchotal Notes—XXII. Heteroptera from North Queensland. *Ann. Mag. nat. Hist.* (7)13: 263-276.
- 1906-7: Oriental Heteroptera. *Ann. Soc. ent. Belg.*, 50: 405-417.
- 1909: Oriental Rhynchota Heteroptera. *Ann. Mag. nat. Hist.* (8)3: 491-507.
- 1918: Contributions to a further knowledge of the Rhynchotal Family Lygaeidae. *Ann. Mag. nat. Hist.* (9)1: 416-424 & (9)2: 173-179, 257-270 & 486-492.
- Dohrn, F. A., 1860: Hemipterologische Miscellaneen. *Stett. ent. Ztg.* 21: 99-109, 1 plate, 158-162, 208.
- Fabricius, J. C., 1787: *Mantissa Insectorum*.
- 1794: *Entomologia Systematica* 4: 1-6, 1-434, 435-462, 463-472.
- 1803: *Systema Rhyngotorum*.
- Gross, G. F., 1962: Aberrant Australian Brachypterous Myodochine Bugs (Lygaeidae Rhyparochrominae). *Rec. S. Aust. Mus.*, Adelaide, 14(2): 371-396, 3 plates.
- Hoffman, W. E., 1932: The Economic Status of the Lygaeids and Notes on the Life History of *Lygaeus hospes* Fabr. and *Aphanus sordidus* Fabr. (Hemiptera, Lygaeidae). *Lingnan Sci. J.*, 11(1): 119-135. Pls. 1-2.
- Kirkaldy, G. W., 1905: Memoir on the Rhynchota collected by Dr. Arthur Willey, F.R.S., chiefly in Birara (New Britain) and Lifu. *Trans. R. ent. Soc. Lond.*, 327-362. Pl. 17.
- 1908: A catalogue of the Hemiptera of Fiji. *Proc. Linn. Soc. N.S.W.*, 33(2): 345-381. Pl. 4.
- Letherry, L. and Severin, G., 1892-6: *Catalogue générale des Hémiptères*. Bruxelles. Tome 1 (1893): i-x & 1-286 pp. Tome 2 (1894): 1-277 pp. Tome 3 (1896): 1-275 pp.
- Lindberg, H., 1958: Hemiptera Insularum Caboverdensium. Systematik Okologie und Verbreitung der Heteropteren und Cicadinen der Kapverdischen Inseln. *Comment. biol.*, Helsingf. 19(1): 1-246, 114 text figs.
- Scudder, G. G. E., 1957: The Higher classification of the Rhyparochrominae (Hem. Lygaeidae). *Ent. mon. Mag.*, 93: 152-156.

- 1958: 24. Lygaeidae (Hemiptera) of Rennell and Bellona Islands. Nat. Hist. of Rennell Is., Brit. Solomon Is., Copenhagen, vol. 2: 135-142, 2 text figs.
- 1962a: The World Rhyparochrominae (Hemiptera: Lygaeidae). 1. New Synonymy and Generic Changes. Canad. Ent., 94(7): 764-773.
- 1962b: The World Rhyparochrominae (Hemiptera: Lygaeidae) II. New Genera for Previously Described Species. Canad. Ent., 94(9): 981-989.
- Stål, C., 1865: Hemiptera Africana, 2.
- 1859: Kongliga svenska Fregatten Eugenie's Resa omkring Jorden, under Befäl af C. A. Virgin Åren 1851-1853. Zoologi I, Insecta. Hemiptera species novas descripsit 219-298, Stockholm.
- 1868: Hemiptera Fabriciana. Fabricianska Hemipterater efter de i Köpenhamn och Kiel förvarade type-exemplaren. granskade och beskrifne. Fasc. I-II K. svenska Vetensk Akad. Handl., VII, No. 11, 1868, pp. 1-148; op. cit. VIII, No. 1, 1869, pp. 1-130.
- 1872: Genera Lygaeidarum Europae disposuit. Öfvers. Vetensk Akad. Förh., Stockh., 29(7): 37-62.
- 1874: Enumeratio Hemipterorum 4. K. svenska Vetensk Akad. Handl., 12(1): 1-186.
- Van Duzee, E. P., 1940: New Species of Hemiptera collected by the Templeton Crocker Expedition to the Solomon Islands in 1933. Pan.-Pacif. Ent., 16: 178-192.
- Walker, F., 1871: Catalogue of the Specimens of Hemiptera Heteroptera in the Collection of the British Museum. Brit. Mus. Pub., Pt. IV: 1-211.
- 1872: Catalogue of the Specimens of Hemiptera Heteroptera in the Collection of the British Museum. Brit. Mus. Pub., Pt. V: 1-202.

LEGENDS TO PLATES

PLATE 19.

- Fig. A. *Bosbequius australis* Distant.
 Figs. B and C. *Dieuches longicollis* (Dallas).
 Fig. D. *Elasmolomus v-album* (Stål).

